

WHAT IS CLAIMED IS:

1. A system for distributing a timing signal, the system comprising:

a timing generator operable to insert a phase of a timing signal and a command signal into a framed signal;

a distribution module operable to receive the framed signal from the timing generator;

a bus control module operable to receive the framed signal from the distribution module and to distribute the framed signal to a telecommunication system.

2. The system of Claim 1, wherein the timing signal comprises a composite clock signal.

3. The system of Claim 1, wherein the distribution module is a first distribution module operable to transmit the framed signal to a second distribution module, and the second distribution modules is operable to transmit the framed signal to the bus control module.

4. The system of Claim 1, wherein:

the bus control module is operable to receive a status signal from the telecommunication system, the status signal comprising status information;

5 the distribution module is operable to receive the status signal from the bus control module;

the timing generator is operable to receive the status signal from the distribution module and to generate a new timing signal in response to the status
10 signal.

5. The system of Claim 1, wherein:

the bus control module is operable to receive a first plurality of signals from the telecommunication system and to select a first derived clock signal from
15 the first plurality of signals;

the distribution module is operable to receive the first derived clock signal from the bus control module and a second plurality of signals from the telecommunication system, and to select a second derived clock signal from the first derived clock signal and the
20 second plurality of signals; and

the timing generator is operable to receive the second derived clock signal from the distribution module and to select the second derived clock signal as the new
25 timing signal.

6. The system of Claim 5, wherein:

the bus control module is operable to select the first derived clock signal in response to the framed signal; and

5 the distribution module is operable to select the second derived clock signal in response to the framed signal.

7. The system of Claim 1, further comprising a
10 plane comprising the timing generator, the distribution module, and the bus control module, the plane operable to distribute the timing signal.

8. The system of Claim 7, wherein the timing
15 generator is a first timing generator, the distribution module is a first distribution module, and the bus control module is a first bus control module, and the plane is a first plane, and further comprising a second plane comprising a second timing generator, a second
20 distribution module, and a second bus control module, the second plane operable to distribute the timing signal.

9. The system of Claim 8, wherein the first timing
25 generator is operable to be aligned with the second timing generator.

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15. A method for distributing a timing signal in a telecommunication system, the method comprising:

inserting a phase of a timing signal and a command signal into a framed signal using a timing generator;

5 transmitting the framed signal to a distribution module;

transmitting the framed signal to a bus control module; and

10 distributing the framed signal to a telecommunication system using the bus control module.

16. The method of Claim 15, wherein the timing signal comprises a composite clock signal.

15 17. The method of Claim 15, wherein the step of distributing comprises distributing the framed signal to a shelf comprising the bus control module.

20 18. The method of Claim 15, wherein the distribution module is a first distribution module, and further comprising transmitting the framed signal to a second distribution module.

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19. The method of Claim 15, further comprising:
transmitting a status signal from the
telecommunication system to the bus control module, the
status signal comprising status information;

5 transmitting the status signal to the distribution
module;

transmitting the status signal to the timing
generator.

10 20. The method of Claim 19, further comprising and
generating a new timing signal in response to the status
signal using the timing generator.

21. The method of Claim 15, further comprising:

15 transmitting a first plurality of signals from the
telecommunication system to the bus control module;

selecting a first derived clock signal from the
first plurality of signals;

20 transmitting the first derived clock signal and a
second plurality of signals to the distribution module;

selecting a second derived clock signal from the
first derived clock signal and the second plurality of
signals;

25 transmitting the second derived clock signal to the
timing generator; and

selecting the second derived clock signal as a new
timing signal using the timing generator.

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22. The method of Claim 21, further comprising
selecting a first derived clock signal from the
first plurality of signals in response to the framed
signal; and

5 selecting a second derived clock signal from the
first derived clock signal and the second plurality of
signals in response to the framed signal.

23. The method of Claim 15, wherein the framed
10 signal is a first framed signal; further comprising:

transmitting a second framed signal to the bus
control module;

selecting one of the first framed signal or the
second framed signal; and

15 distributing the selected frame signal to the
telecommunication system.

24. The method of Claim 15, transmitting an
external signal to the timing generator, and generating
20 the timing signal using the external signal.

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